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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,334	08/23/2004	Shuichi Ichikawa	120868	3762
25944	7590	05/04/2007		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER VERBITSKY, GAIL KAPLAN	
			ART UNIT 2859	PAPER NUMBER
			MAIL DATE 05/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/505,334	Applicant(s) ICHIKAWA ET AL.	
	Examiner Gail Verbitsky	Art Unit 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13,16-18,22,24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13,16-18,22,24-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 13, 16-18, 22, 24 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Kishimoto et al. (U.S. 5693685) [hereinafter Kishimoto] in view of Amer.

Kishimoto teaches a honeycomb structure/ device as shown in Fig. 1. Kishimoto teaches that its thermal conductivity was (needs to be) determined (col. 13, lines 9-15). Kishimoto teaches that sides of the honeycomb structure are covered with a heat-insulating material (container) 1.

Kishimoto does not teach the particular method for determining thermal conductivity.

Amer teaches the device/ method stated above.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a method taught by Amer, to measure a thermal conductivity of a structure of Kishimoto, so as to provide the honeycomb structure with a conduction path through the honeycomb structure, as very well known in the art, and thus, obtaining data how the structure conducts heat.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the device having two contact members covered with a film of thermally conductive grease/ paste, so as to improve their thermal conductivity, and thus, provide a better heat sinking effect and enhance a heat flow, in order to obtain more accurate results of measurements, by making fast heating and not allowing the heat to be lost into the atmosphere.

With respect to claim 22: the particular contact pressure, i.e., 1 to 10 kg/ cm², as stated in claim 22, absent any criticality, is only considered to be the "optimum" pressure that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the particular geometry of a sample and the desired accuracy of the measurements, etc. See in re Boesch, 205 USPQ 215 (CCPA 1980).

With respect to claim 24: the particular thermal conductivity of the honeycomb structure, i.e., 1W/ mK or more, as stated in claim 24, absent any criticality, is only considered to be the "optimum" thermal conductivity that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the intended use of the device/ honeycomb structure, etc. See in re Boesch, 205 USPQ 215 (CCPA 1980).

With respect to claims 16-17: using the particular material, i.e., material of a high flexibility, used for the highly conductive member, as stated in claims 16-17, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made would have been able to determine

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using routine experimentation based, among other things, on the intended use of the device/ honeycomb structure, its porosity and thickness, so as not to damage the honeycomb structure during the test by using flexible contacts under pressure, etc. See in re Boesch, 205 USPQ 215 (CCPA 1980).

The method steps will be met during the normal operation of the device stated above.

4. Claim 25 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Kishimoto and Amer, as applied to claims 13, 16-18, 22, 24 above, and further in view of Kirino et al. (U.S. 6730421) [hereinafter Kirino].

Kishimoto and Amer disclose a device as stated above.

They do not teach the particular material to make the honeycomb structure.

With respect to claim 25: see, for example, Kirino et al. (U.S. 6730421) who teach that a honeycomb structure can be made of silicon nitride.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the structure, disclosed by Kishimoto and Amer, of silicon nitride, as taught by Kirino, so as to allow the operator to test a thermally conductive honeycomb structure made of silicon nitride material because this material has its own thermal conductivity which is an important factor when a honeycomb structure is being used as, for example, a thermal interface device, in order to know the thermal conductivity of the interface device or heat sink device, and thus, to prevent an object of interest from overheating, by using a known material on the basis of its suitability for the intended use of the invention.

The method steps will be met during the normal operation of the device stated above.

Response to Arguments

5. Applicant's arguments filed 01/10/2007 have been fully considered but they are not persuasive.

With respect to combination of Nagai and Amer: the arguments are now moot.

With respect to combination of Kishimoto and Amer: Applicant states that the primary reference is not combinable with Amer (secondary reference) since Amer is directed to measuring thermal conductivity of films up to 150 micrometers. This argument is not persuasive because in the claims, the Applicant does not describe/ define a honeycomb structure as having shape/ size different from the film of Kishimoto or Amer. Amer determines thermal conductivity of a film structure, Amer does specify the density of the film structure (i.e., porous, foamed, etc., and thus, honeycomb-like structure). However, Amer addresses to a problem of stacks of the films, thus, in a broad sense, determining thermal conductivity of non-homogenous (varied density) stack of films, which, in a broad sense, could be considered as a honeycomb structure.

Kishimoto discloses a porous (foam cell/ honeycomb) insulation (i.e., foamed polyurethane) sample whose thermal conductivity needs to be known and thus, determined. Kishimoto does not rule out any shape or density of the structure. In fact, according to Fig. 1, the sample looks like a layer having a thickness, in a broad sense; it could be considered a porous film. Therefore, the references are properly combined.

Furthermore, please note, that in the rejection on the merits, the examiner considered that any porous structure, in a broadest reasonable interpretation, could be considered a honeycomb structure.

In addition: the examiner recognizes that there should be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references: In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. the test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). The references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969.

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Narajo Carvajal (U.S. 7104681) teaches that in order to provide a better heat conduction the conducting surfaces are covered with a thermally conductive grease/paste.

Sakuma et al. (U.S. 5112136) teach that application of a heat conductive medium on the surfaces of the device minimizing the interface thermal resistance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

Gail Verbitsky

Primary Patent Examiner, TC 2800



April 18, 2007